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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,047	10/21/2003	Joel L. Martin	51757-0042 (51757-288156)	3791
35395	7590	10/07/2005	EXAMINER	
WOMBLE CARLYLE SANDRIDGE & RICE, PPLC CHEVRON PHILLIPS CHEMICAL COMPANY LP P.O. BOX 7037 ATLANTA, GA 30357-0037			CHOI, LING SIU	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/690,047

Applicant(s)

MARTIN ET AL.

Examiner

Ling-Siu Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/21/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This Application is a Continuation of US Application No. 09/964,136, filed September 26, 2001, now US Patent No. 6,657,034, which is a Division of US Application No. 08/943,303, filed October 14, 1997, now US Patent No. 6,329,476.
2. This Office Action is in response to the Preliminary Amendment filed October 21, 2003. Claims 1-19 were canceled and claims 20-36 have been added. Claims 20-36 are now pending.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

**A person shall be entitled to a patent unless --**

**(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

4. Claims 23-24 (alumina support) are rejected under 35 U.S.C. 102(b) as being anticipated by Ballard et al. (US 4,056,669).

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A polymerization catalyst composition comprising

**MR<sub>4</sub>** [claim 2: M(CH<sub>2</sub>XR<sub>3</sub>)<sub>4</sub> - X = C, Si, Ge, Sn, or Pb]

M = titanium, zirconium, or hafnium

R = beta-stable ligand

Wherein MR<sub>4</sub> is supported on an aluminum-containing support comprising

fluorided alumina, fluorided silica-alumina,

fluorided/silated alumina,

aluminophosphate, or mixtures thereof

(summary of claim 1)

Ballard et al.' 669 disclose a catalyst for ethylene polymerization, comprising (a) a transition metal complex of general formula of MR<sub>m</sub>, wherein M is a metal of Group IVa; R is a group of the general formula of -CH<sub>2</sub>Z(R<sup>1</sup>)<sub>3</sub> with Z being silicon, germanium, tin, or lead and R<sup>1</sup> being hydrocarbon or hydrogen and (b) particulate alumina, wherein the transition metal complex can be zirconium tetrabenzyl (claims 1 and 5). Thus, the present claims are anticipated by the disclosure of Ballard et al.' 699.

5. Claims 23-24 (alumina support) are rejected under 35 U.S.C. 102(b) as being anticipated by Ballard et al. (US 3,969,386).

Ballard et al.'386 disclose an organometallic compound for olefin polymerization, the organometallic compound having the general formula of M(CH<sub>2</sub>SiR<sup>1</sup>R<sup>2</sup>R<sup>3</sup>)<sub>m</sub> with M being titanium and being supported on silica, alumina, or mixtures thereof (col. 4, lines 13-21 and 54-59; claims 1 and 4). Thus, the present claims are anticipated by the disclosure of Ballard et al.' 386.

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6. Claims 23-24 (alumina support) are rejected under 35 U.S.C. 102(b) as being anticipated by Setterquist (US 3,950,269).

Setterquist discloses a catalyst for olefin polymerization, comprising (a) a tetra(hydrocarbyl) transition metal compound in the general formula of  $(RCH_2)_4M$  with R being aryl or tertiary alkyl and M being Ti, Zr, or Hf and (b) alumina, wherein the tetra(hydrocarbyl) transition metal compound can be tetra(neophy)zirconium or tetra(benzyl) zirconium; the alumina has a surface area of 10 to 500 m<sup>2</sup>/g (col. 5, lines 66-68; col. 6, lines 1-8; claims 1 and 8-10). Thus, the present claims are anticipated by the disclosure of Setterquist.

7. Claims 23-24 (alumina support) are rejected under 35 U.S.C. 102(b) as being anticipated by Candlin et al. (US 3,738,944).

Candlin et al. disclose a catalyst for olefin polymerization, comprising (a)  $M[CH_2Z(R)_3]_4$  with Z being silicon, germanium, tin, or lead and (b) silica, wherein  $M[CH_2Z(R)_3]_4$  can be zirconium or titanium tetra(benzyl) col. 2, lines 47-72; col. 3, lines 1-6; Examples 1 and 7). Thus, the present claims are anticipated by the disclosure of Candlin et al.

8. Claims 23-24 (alumina support) are rejected under 35 U.S.C. 102(b) as being anticipated by Kruse (US 3,773,742).

Kruse discloses a catalyst comprising (a) tetraneopentyl titanium and (b) silica or

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alumina (abstract; col. 2, lines 12-13 and 51-56). Thus, the present claims are anticipated by the disclosure of Kruse.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 20-22 and 25-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ballard et al. (US 4,056,669), Ballard et al. (US 3,969,386), Setterquist (US 3,950,269), Candlin et al. (US 3,738,944), or Kruse (US 3,773,742), either one in view of Wu (US 5,272,124).

The disclosure of Ballard et al.'669, Ballard et al.'386, Setterquist, Candlin et al, or Kruse is adequately set forth in paragraph 4, 5, 6 ,7, or 8 and is incorporated herein by reference.

The difference between the present claims and the disclosure is the requirement of the support to be fluorided alumina, fluorided silica-alumina, fluorided/silated alumina, aluminophosphate, or mixtures thereof.

Wu disclose a catalyst component supported on a carrier which is "selected from the group consisting of silica...alumina, fluorided alumina....aluminophosphate...

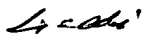
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.fluorided/silated alumina, and mixtures thereof" (col. 3, lines 18-32). Thus, the use of silica or alumina is equivalent to or exchangeable with the use of fluorided alumina, aluminophosphate, or fluorided/silated alumina as a support for the catalyst. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use fluorided alumina, aluminophosphate, or fluorided/silated alumina to replace silica or alumina in the disclosure of Ballard et al.'669, Ballard et al.'386, Setterquist, Candlin et al, or Kruse and thereby obtain the present invention.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



**LING-SUI CHOI  
PRIMARY EXAMINER**

September 28, 2005